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Jul 30, 1998

DERWENT-ACC-NO: 1998-427738

DERWENT-WEEK: 200245

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TITLE: Simple, cheap image-receiving sheet for recording - comprises supporting sheet and dye- or ink-receiving layer made by powder coating with resin composition

INVENTOR: ARAI, T; MATSUI, F ; MITSUHATA, T ; SANO, C

## PATENT-ASSIGNEE:

ASSIGNEE	CODE
BANDO CHEM IND LTD	BAND

PRIORITY-DATA: 1997JP-0110803 (April 28, 1997), 1997JP-0015086 (January 29, 1997), 1997JP-0089681 (April 8, 1997), 1997JP-0089682 (April 8, 1997), 1997JP-0107806 (April 24, 1997), 1997JP-0107807 (April 24, 1997), 1997JP-0108742 (April 25, 1997), 1997JP-0110802 (April 28, 1997)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 9832542 A1	July 30, 1998	J	072	B05D005/04
JP 10203031 A	August 4, 1998		008	B41M005/38
JP 10278441 A	October 20, 1998		009	B41M005/38
JP 10278442 A	October 20, 1998		008	B41M005/38
JP 10297115 A	November 10, 1998		008	B41M005/38
JP 10297116 A	November 10, 1998		009	B41M005/38
JP 10297117 A	November 10, 1998		014	B41M005/38
JP 10297118 A	November 10, 1998		009	B41M005/38
JP 10297119 A	November 10, 1998		008	B41M005/38
EP 958865 A1	November 24, 1999	E	000	B05D005/04
JP 3135860 B2	February 19, 2001		008	B41M005/38
JP 3135861 B2	February 19, 2001		013	B41M005/38
US 6326055 B1	December 4, 2001		000	B05D003/02
US 6391825 B1	May 21, 2002		000	B41M005/035

DESIGNATED-STATES: US AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE DE FR GB IT NL

## APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	descriptor
WO 9832542A1	January 28, 1998	1998WO-JP00378	
JP 10203031A	January 29, 1997	1997JP-0015086	
JP 10278441A	April 8, 1997	1997JP-0089681	
JP 10278442A	April 8, 1997	1997JP-0089682	
JP 10297115A	April 24, 1997	1997JP-0107806	
JP 10297116A	April 24, 1997	1997JP-0107807	
JP 10297117A	April 25, 1997	1997JP-0108742	
JP 10297118A	April 28, 1997	1997JP-0110802	
JP 10297119A	April 28, 1997	1997JP-0110803	
EP 958865A1	January 28, 1998	1998EP-0901048	
EP 958865A1	January 28, 1998	1998WO-JP00378	
EP 958865A1		WO 9832542	Based on
JP 3135860B2	April 24, 1997	1997JP-0107806	
JP 3135860B2		JP 10297115	Previous Publ.
JP 3135861B2	April 25, 1997	1997JP-0108742	
JP 3135861B2		JP 10297117	Previous Publ.
US 6326055B1	January 28, 1998	1998WO-JP00378	
US 6326055B1	February 18, 1999	1999US-0155488	
US 6326055B1		WO 9832542	Based on
US 6391825B1	January 28, 1998	1998WO-JP00378	CIP of
US 6391825B1	February 18, 1999	1999US-0155488	CIP of
US 6391825B1	March 3, 2000	2000US-0517632	
US 6391825B1		US 6326055	CIP of

INT-CL (IPC) : B05 D 1/04; B05 D 1/06; B05 D 3/02; B05 D 5/04; B05 D 7/24; B32 B 27/00; B32 B 27/10; B32 B 27/20; B41 M 5/00; B41 M 5/035; B41 M 5/26; B41 M 5/38; B41 M 5/40; C08 J 7/04; C08 L 67/00; C08 L 83/04; C09 D 5/03; D21 H 27/00; G03 G 7/00

ABSTRACTED-PUB-NO: US 6326055B

BASIC-ABSTRACT:

An image-receiving sheet for recording comprises a substrate sheet on which there is a dye- or ink-receiving layer in the form of resin layer made with a powder coating composition-containing resin component. Also claimed are the following: (i) a process for producing the image-receiving sheet for recording with ink or dye by applying a powder coating composition-containing resin component onto a supporting sheet by electrostatic spraying in a dry manner before heating, melting and fixing; (ii) a thermal-transfer image-receiving sheet in which there are thermal-transfer sheet with ink or dye layer and thermal-transfer image-receiving sheet with a layer obtained from the resin component provided on the supporting sheet, the resin film of which is made with a powder coating composition-containing resin component with average particle diameter of 1-30 mm and its thickness is 1-100  $\mu$ m, particularly its surface roughness by JIS B 0601-1004 in terms of arithmetical mean roughness Ra being 0.1-4 and ten-point average roughness Rz being 0.5-20, especially both surfaces of the substrate are coated with the resin composition, or on surface of the supporting sheet there is a first resin layer as the image-receiving layer together with a second non-dye- or ink-receiving resin layer at the back of the substrate; (iii) a peelable layer-containing thermal-transfer image-receiving sheet composed of a thermal-transfer sheet with dye or ink layer and a thermal-transfer image-receiving sheet in combination, in which the thermal-transfer image-receiving sheet is installed on the substrate sheet together with the image-receiving first resin layer for ink or dye combined to form the image-receiving layer on which is a thermal-transfer sheet and a second peelable resin, or a peelable layer of inorganic or organic microparticles, or a peelable layer of dried substance obtained with reactive silicone oil; (iv) a process of making thermal-transfer image-receiving sheet by electrostatic spraying the powder coating composition, heating and fixing to give the dye- or ink-receiving layer; (v) a process for producing peelable layer-containing thermal-transfer image receiving sheet by wet-coating the dye- or ink-receiving first resin as a powder

composition by electrostatic spraying the onto the substrate sheet, heating and fixing, followed by drying-coating the thermal-transfer and peelable layer on the receiving layer, with adhering particularly after hardening of the inorganic or organic particles or the reactive silicone oil; and (vi) another process for manufacturing the thermal-transfer image-receiving sheet in which a film is formed by wet-coating of a white powder coating composition comprising 70-95 wt.% a resin component, white colouring agent and 0.5-12 wt.% reactive and curable silicone oil which has a resin mixture of 50-90 wt.% a carboxyl and/or hydroxyl group-containing saturated polyester resin with acid value of 1-20 mg KOH/g, glass transition temperature of 50-70 deg. C and 50-10 wt.% styrene-acrylic copolymer.

USE - The image-receiving sheets are especially used e.g. in inkjet and engraved printings.

ADVANTAGE - Said sheets can provide good resolution and superb images, possible for full colour prints, without degrading quality on smooth surface resin-coated papers such as art papers and offset papers.

ABSTRACTED-PUB-NO:

US 6391825B

EQUIVALENT-ABSTRACTS :

An image-receiving sheet for recording comprises a substrate sheet on which there is a dye- or ink-receiving layer in the form of resin layer made with a powder coating composition-containing resin component. Also claimed are the following: (i) a process for producing the image-receiving sheet for recording with ink or dye by applying a powder coating composition-containing resin component onto a supporting sheet by electrostatic spraying in a dry manner before heating, melting and fixing; (ii) a thermal-transfer image-receiving sheet in which there are thermal-transfer sheet with ink or dye layer and thermal-transfer image-receiving sheet with a layer obtained from the resin component provided on the supporting sheet, the resin film of which is made with a powder coating composition-containing resin component with average particle diameter of 1-30 mm and its thickness is 1-100  $\mu$ m, particularly its surface roughness by JIS B 0601-1004 in terms of arithmetical mean roughness Ra being 0.1-4 and ten-point average roughness Rz being 0.5-20, especially both surfaces of the substrate are coated with the resin composition, or on surface of the supporting sheet there is a first resin layer as the image-receiving layer together with a second non-dye- or ink-receiving resin layer at the back of the substrate; (iii) a peelable layer-containing thermal-transfer image-receiving sheet composed of a thermal-transfer sheet with dye or ink layer and a thermal-transfer image-receiving sheet in combination, in which the thermal-transfer image-receiving sheet is installed on the substrate sheet together with the image-receiving first resin layer for ink or dye combined to form the image-receiving layer on which is a thermal-transfer sheet and a second peelable resin, or a peelable layer of inorganic or organic microparticles, or a peelable layer of dried substance obtained with reactive silicone oil; (iv) a process of making thermal-transfer image-receiving sheet by electrostatic spraying the powder coating composition, heating and fixing to give the dye- or ink-receiving layer; (v) a process for producing peelable layer-containing thermal-transfer image receiving sheet by wet-coating the dye- or ink-receiving first resin as a powder composition by electrostatic spraying the onto the substrate sheet, heating and fixing, followed by drying-coating the thermal-transfer and peelable layer on the receiving layer, with adhering particularly after hardening of the inorganic or organic particles or the reactive silicone oil; and (vi) another process for manufacturing the thermal-transfer image-receiving sheet in which a film is formed by wet-coating of a white powder coating composition comprising 70-95 wt.% a resin component, white colouring agent and 0.5-12 wt.% reactive and curable silicone oil which has a resin mixture of 50-90 wt.% a carboxyl and/or hydroxyl group-containing saturated polyester resin with acid value of 1-20 mg KOH/g, glass transition temperature of 50-70 deg. C and 50-10 wt.% styrene-acrylic copolymer.

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such as art papers and offset papers.

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WO 9832542A

CHOSEN-DRAWING: Dwg.1/1

TITLE-TERMS: SIMPLE CHEAP IMAGE RECEIVE SHEET RECORD COMPRISE SUPPORT SHEET DYE INK RECEIVE LAYER MADE POWDER COATING RESIN COMPOSITION

DERWENT-CLASS: A85 G05 P42 P73 P75 T04

CPI-CODES: A12-W07F1; G05-F01;

EPI-CODES: T04-G02E;

UNLINKED-DERWENT-REGISTRY-NUMBERS: 1694U; 1966U

ENHANCED-POLYMER-INDEXING:

Polymer Index [1.1] 018 ; D60 F26\*R F35\*R ; P1978\*R P0839 D01 D50 D63 F41 ; S9999

S1514 S1456 ; S9999 S1387 Polymer Index [1.2] 018 ; G0260\*R G0022 D01 D12 D10 D26 D51 D53 ; R00708 G0102 G0022 D01 D02 D12 D10 D19 D18 D31 D51 D53 D58 D76 D88 ; H0011\*R ; H0022 H0011 ; S9999 S1514 S1456 ; S9999 S1387 ; P1741 ; P0088 Polymer Index [1.3] 018 ; P1445\*R F81 Si 4A ; M9999 M2175 ; S9999 S1376 ; M9999 M2073 ; L9999 L2391 ; L9999 L2073 Polymer Index [1.4] 018 ; P1445\*R F81 Si 4A ; M9999 M2039 ; S9999 S1376 ; S9999 S1514 S1456 ; M9999 M2073 ; L9999 L2391 ; L9999 L2073 Polymer Index [1.5] 018 ; N9999 N7056 N7034 N7023 ; N9999 N7067 N7034 N7023 ; N9999 N6939\*R ; N9999 N6177\*R ; K9392 ; Q9999 Q8822 Q8775 ; B9999 B5356 B5276 ; N9999 N6202 N6177 ; N9999 N6166 ; B9999 B5243\*R B4740 ; B9999 B5209 B5185 B4740 ; B9999 B5334 B5298 B5276 ; B9999 B5323 B5298 B5276 ; B9999 B4262 B4240 ; K9563 K9483 ; N9999 N6780\*R N6655 ; B9999 B5378 B5276 ; B9999 B5618 B5572 ; B9999 B4751 B4740 ; N9999 N6439 ; N9999 N6144 ; ND01 ; ND07 Polymer Index [1.6] 018 ; R01966 D00 F20 Ti 4B Tr O\* 6A ; A999 A077\*R

## SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C1998-128991

Non-CPI Secondary Accession Numbers: N1998-333834

**WEST****Freeform Search****Database:**

US Patents Full-Text Database  
US Pre-Grant Publication Full-Text Database  
JPO Abstracts Database  
EPO Abstracts Database  
Derwent World Patents Index  
IBM Technical Disclosure Bulletins

**Term:**

Arithmetical mean roughness and ((ink jet) or  
inkjet or ink-jet)

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20

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**Search History**

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side by side**Hit Count Set Name**  
result set*DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ*

L2 Arithmetical mean roughness and ((ink jet) or inkjet or ink-jet) 1 L2

L1 Arithmetical mean roughness and ((ink jet) or inkjet or ink-jet) 0 L1

END OF SEARCH HISTORY

